FACTORS INFLUENCING YOUTH'S INTENTION TO ORDER ONLINE FOOD DELIVERY SERVICES IN HANOI

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Abstract

The main purpose of this study was to integrate trust and perceived risk into the theory of planned behavior (TPB) and the technology acceptance model (TAM) to explore factors influencing youth's intention to order online food delivery services (OFDS) in Hanoi, then to provide some practical implications to develop OFDS. The research adopted the structural equation modeling (SEM) to examine the data. The final sample consisted of 435 young people between the age of 15 and 25 in Hanoi. The study used the primary data collected from November 2020 to the end of January 2021 and the second data collected in the last 5 years. As a result, the findings showed that the attitude was the strongest predictor of the intention, followed by the trust. Low-magnitude predictors included subjective norms and perceived behavioral control, while perceived risk had no impact on the attitude and intention, even it positively affected trust. Besides, perceived usefulness had direct influence on the attitude, while perceived ease of use indirectly affected the attitude through perceived usefulness. Furthermore, there were differences in the impact of factors between males and females, between people having less than 5-million income and people having 5-million-or-more income. Hence, this study offered the substantial practical recommendations for OFDS developers and restaurants, and provided a mapping of the factors influencing consumers' intention to use OFDS.

Keywords: behavioral intention, online food delivery services, technology acceptance model, theory of planned behavior.

1. Introduction

The rationale of the study

In the last few years, several new technologies have affected the food and beverage sector and players' strategies. In particular, advancements in food delivery services are changing consumers' food buying habits. Online food delivery services (OFDS) is an innovative way to purchase food. With the increasing use of Internet and smartphones, the

food delivery market is being reshaped. Through online websites and applications, OFDS provide consumers convenience and numerous food options from many different food retailers. Besides, these services may become an opportunity for restaurants to increase their revenues with the simplified process of service, payment, … Hence, the global OFDS market is in the robust growth. According to the report by IMARC Group (2018), the global OFDS market grew at 84.6 billion USD. In additon, according to Statista (2019), its revenue amounted to approximately 94.38 billion USD, resulting in a market volume of 200 billion USD by 2025.

An increase in smartphone users and Internet penetration has give a boost to OFDS in the world and there is no exception in Vietnam with 64 million people (about 66% of the population) accessing and using the Internet (Digital Marketing, 2019). According to the data of Statista (2020), Vietnam's revenue in the OFDS market amouted to about 274 million USD. The market is expected to reach 377 million USD in 2021 and 557 million USD in 2024. Not to mention, according to the research by Kantar TNS (2020), this thriving market is set to supersize to a hefty 449 million USD in 2023. According to Q&Me's survey (2021), 51% of consumers in Hanoi and TP. HCM has used OFDS. Especially, this number has increased up to 75% when the COVID-19 pandemic has broken out, because most Vietnamese people are practicing social distancing.

Thus, OFDS is playing a pivotal role. However, if businesses want to have great advantages to maintain and develop their business, it is necessary to grasp customer psychology. Factors that influence the intention to use OFDS often vary with different customers of each geographic area, gender, age, occupation and income, ... With the desire to find out the factors affecting the intention to use OFDS, we select the topic *"Factors influencing youth's intention to order online food delivery services in Hanoi"* to identify and examine the important factors affecting the youth's intention to use OFDS. This study not only contributes scientific implications to OFD market, but also brings practical recommendations to enterprises in building business strategies.

Related Literature Reviews

There have been many studies investigating the main driver of online shopping. Rong Li et al. (2007) demonstrated that trust is an important factor affecting the intention in online shopping of consumers in China. Some studies focused on the characteristics of technology (Ma Mengli, 2011; Nguyen Thi Kim Van & Nguyen Khanh Ngoc, 2013), while others used the generic behavioral models (Sita Mihra, 2014; Shyh-Hwang Lee & Hoang Thi Bich Ngoc, 2010). However, studies on the intention to order online food delivery services are limited (Hansen et al.,2004; Alagoz & Hekimoglu, 2012; Quevedo-Silva et al., 2016; Lee et al., 2017). In Vietnam, there are not many research on this field.

Moreover, the lack of explanation about the positive effect of perceived risk has left a research gap. In addition, most of the above studies are conducted in foreign countries with the different characteristics of political, economics, social and culture from Vietnam in general and Hanoi in particular, leading to the intention to use OFDS is different. In Vietnam, although online shopping has developed and attracted the attention of the public, there are general studies on online shopping. For each product and each age range, factors' influence on consumers' buying intentions will vary in degree.

The aim of this research is to fill the gap on the drivers behind the consumer's intention to adopt OFDS, and to analyse the effects of factors. In this stusy, we integrate trust and perceived risk into the theory of planned behavior (TPB) and the technology acceptance model (TAM) to explore factors influencing youth's intention to order online food delivery services (OFDS) in Hanoi, then to provide some practical implications to develop OFDS.

Theoretical Framework

Currently, there is still no specific concept of online food delivery service, the research only stops at investigating: "What is online shopping?". However, according to the way of business and consumption, we can understand this as a service that provides a variety of different dishes to diners through applications, websites on smartphones and mobile devices.

Meanwhile, the concepts of purchase intention are somewhat more diverse. According to Ajzen (1991), "intention is motivating and represents the level of effort an individual is willing to put into performing a particular behavior". By 2012, Park had simplified it by defining "intent to buy as what we think we will buy". There are also a few other studies but in general we can understand "Purchase intention is the probability that a customer will buy a product or service".

In this research, we propose the following model:
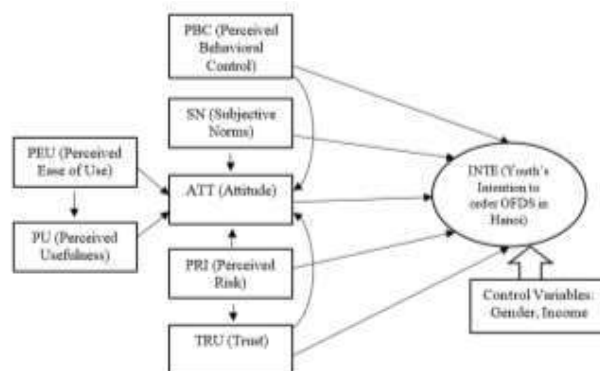
In both the TPB (Ajzen, 1991) and the TAM (Davis, 1989), the attitude (ATT) towards a given behaviour has a relevant effect on the behavioral intention (BI). According to Ajzen (1991), attitude refers to "the degree to which a person has a favourable or

unfavourable evaluation or appraisal of the behaviour in question". Hansen et al. (2004) confirmed that consumers' ATT towards online grocery shopping was the most important predictor of BI in online grocery shopping. Other studies focussed on using apps to purchase food also highlighted the importance of ATT BI (Lee et al., 2017; Yeo et al., 2017; Cho et al., 2019). Accordingly, we propose the following hypothesis:

[H1]: "Attitude positively influences the behavioural intention to use OFDS".

At the same time, according to the TPB model, perceived behavioral control (PBC) and subjective norms (SN) influenced BI. Ajzen (2002) defined PBC as the "subjective degree of control over performance of the behaviour itself". Various studies confirmed that PBC is a relevant factor in the BI to use OFD. For example, Hansen et al. (2004) showed the mportance of considering PBC in analysing the BI to purchase food online. Moreover, Barkhi et al. (2008) revealed PBC affected consumers' ATT towards online shopping. Thus, we propose the following hypotheses:

[H2a]: "Perceived behavioral control positively influences the behavioural intention to use OFDS".

[H2b]: "Perceived behavioral control positively influences the attitude towards OFDS".

Subjective norms – "the perceived social pressure to perform or not to perform the behavior" (Ajzen, 1991). Several scholars have found a significant positive link between SN and BI in online grocery shopping (Hansen et al., 2004; Piroth et al., 2020). In addition, when customers perceive that their friends, family and other relevant people are positively oriented towards using OFDS, they will be more sympathetic towards adopting it. Thus, we propose the following hypotheses:

[H3a]: "Subjective norms positively influences the intention to use OFDS".

[H3b]: "Subjective norms positively influences the attitude towards OFDS".

In the TAM, Davis (1989) identified two main cognitive responses predicting ATT: perceived ease of use (PEU) and PU. Davis (1989) defined PEU as "the degree to which a person believes that using a particular system would be free of effort". In OFDS, PEU refers to ease of making orders, choosing food or restaurants and tracking orders (Ray et al., 2019), while PU refers to the perceived utility and advantages of purchasing food on apps (Piroth et al., 2020). Several studies highlighted the positive influences of PEU and PU on ATT towards OFDS (Alagoz and Hekimoglu, 2012; Cho et al., 2019). Moreover, Lee et al. (2017) confirmed Davis's idea (1989) that PEU influenced PU. Based on this, the following hypotheses are proposed:

[H4]: "Perceived ease of use positively influences the attitude towards OFDS".

[H5]: "Perceived usefulness positively influences the attitude towards OFDS".

[H6]: "Perceived ease of use positively influences the perceived usefulness of OFDS".

Several scholars have studied how trust (TRU) influences BI (Alagoz & Hekimoglu, 2012; Ashraf et al., 2019). In food delivery, Alagoz & Hekimoglu (2012) showed that TRU improved the ATT towards OFDS. Cho et al. (2019) confirmed these results, finding that in OFDS, TRU significantly influenced both ATT and BI. Therefore, we propose the following two hypotheses:

[H7a]: "Trust in OFDS positively influences the behavioural intention to use OFDS".

[H7b]: "Trust in OFDS positively influences the attitude towards OFDS".

The role of perceived risk in the intention to adopt internet services is increased because customers perform their transactions with no face to face contact with the supplier's personnel and no cash on hand. By using internet services, customers are concerned about potential financial risks such as the loss of their money during the transaction process and perceived threats for privacy and personal information leakage. Based on the above, it is expected that perceived risk negatively affects customers' trust, attitude and intentions to adopt OFDS. Thus, the following hypotheses will be tested:

[H8a]: "Perceived risk negatively influences the behavioural intention to use OFDS".

[H8b]: "Perceived risk negatively influences the attitude towards OFDS".

[H8c]: "Perceived risk negatively influences the trust in OFDS".

2. Method

Sample and Data Collection:

For the main survey, we collected the data from young people between the age of 15 and 25 in Hanoi from November 2020 to the end of January 2021, giving out the survey and sharing it on Facebook. We collected 450 questionnaires, but only 435 were complete. The sample represented males (26.67%), females (71.95%) and LGBT (1.38%). For the income, we divided users in two classes according to their income in a one-month period: less than 5 million VND (89%) and 5 million or more (11%).

Measures and Questionaire Development:

Measurement items used to evaluate all variables were cited from existing research and modified to be suitable in the context of OFDS. We have developed a research questionnaire adapting TAM and TPB constructs to fit our research context. All 34 items were measured on a 5-point Likert-type scale, which ranged from strongly disagree (1) to strongly agree (5). PBC (4 items), ATT (5 items) and SN (6 items) were adapted from Ajzen

(1991), Lin (2007), Bhattacherjee (2000). The three items for PEU and the five items for PU were adapted from Davish (1989), Lin (2007), Ha Ngoc Thang & Nguyen Thanh Do (2016) and us. TRU (4 items) were adapted from Gefen et al. (2003), Jarvenpaa et al. (2000); McKnight et al. (2002). PRI (7 items) were adapted from Pavlou (2003), Forsythe et al. (2006), Corbitt et al. (2003). Finally, those for BI (three items) were adapted from Ajzen (1991), Davish (1989).

Afterwards we tested our model by using Cronbach's Alpha Reliability Analysis, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), Structural Equation Modeling (SEM) and Multigroup Analysis.

3. Results

3.1. Cronbach's Alpha and Exploratory Factor Analysis (EFA)

Cronbach's Alpha results gave us some numbers from 0.832 to 0.893, which indicated a high level of internal consistency for each scale with this specific sample.

Table 1. Results of Cronbach's Alpha and Exploratory Factor Analysis

Cron-bachs Alpha		Questions	Component						
			1	2	3	4	5	6	7
0.893	PRI6	Food is not what I expected	.799						
	PRI4	OFDS is not safe because I can not sample the food before buying	.795						
	PRI1	Credit card number theft	.793						
	PRI5	OFDS is not safe because I can not see the real food before buying	.792						
	PRI2	Personal information theft	.790						
	PRI7	I can lose much money when using OFDS	.715						
	PRI3	Food is not delivered to me	.703						
0.885	SN2	My family think that OFDS is a good idea		.803					
	SN4	My important people and idols encourage me to use OFDS		.771					

Cron-bachs Alpha		Questions	Component						
			1	2	3	4	5	6	7
	SN5	The information about OFDS is great		.767					
	SN3	I use OFDS because many people use them		.744					
	SN6	The media affects my intention to order OFDS		.741					
	SN1	My friends think that OFDS is a good idea		.712					
0.883	PBC3	I have time to order OFDS			.807				
	PBC4	I have money to order OFDS			.796				
	PBC2	I have smartphone, Internet to order OFDS			.771				
	PBC1	I am confident in my ability to use OFDS			.749				
0.852	ATT1	I like OFDS				.719			
	ATT2	Using OFDS is a good idea				.697			
	ATT3	Using OFDS is the best way in the Industry 4.0 era				.667			
	ATT4	OFDS is attractive to me				.643			
	ATT5	OFDS is well suited to my habit				.581			
0.852	PU2	I can buy cheaper food					.836		
	PU3	OFDS gives me some food which there is not in my place					.810		
	PU1	OFDS is useful for comparing a variety of food					.764		
	PU4	Using OFDS saves me time					.550		

Cron-bachs Alpha		Questions	Component						
			1	2	3	4	5	6	7
0.832	TRU1	I believe OFDS's websites and applications are reliable						.763	
	TRU3	I trust OFDS provides safe deal						.749	
	TRU2	I trust OFDS's websites and applications to do the job right						.742	
	TRU4	I trust OFDS brings the best benefits to me						.632	
0.893	PEU2	Using a website or a food delivery application is easy for me							.736
	PEU3	I easily search food and track the order							.698
	PEU1	I find it easy to order food through the Internet							.697

After the first test, PU5 was eliminated because it contributed to two factors. For the final stage, the factorability of the remaining 33 items was examined. The KMO (0.919) value was large and Bartlett's test of sphericity (Chi-square = 8978.334, df = 528, p = 0.000) was significant, implying that the present research had an adequate sample size and correlations among at least some of the items. The rotated component matrix was used from these 33 items; 7 components were extracted and they were able to capture 69.629% of the variability in the data.

3.2. Confirmatory Factor Analysis (CFA)

The results of CFA indicated that the measurement model had a proper fit to the data (Chi-square/df = 2.090, CFI = 0.942, GFI = 0.872, TLI = 0.934, RMSEA = 0.050). In the past, Hair et al. (2010) found that it was necessary to estimate the factor loadings for each construct to establish the reliability and validity. The reliability was evaluated on the basis that composite reliability (CR) should be greater than 0.7. Moreover, the average variance extracted (AVE) was used to test for the convergent validity. It is recommended that the AVE should be greater than 0.5. Finally, the discriminant validity was assessed by comparing AVE values and MSV (maximum squared variance) values. All constructs' AVE values should exceed MSV values. Hence, the discriminant validity was also established.

Table 2 showed that the reliability, the convergent validity and the discriminant validity were supported in this study.

Table 2. CR, AVE, MSV values

	CR	AVE	MSV
TRU	0.820	0.533	0.504
PRI	0.859	0.504	0.116
SN	0.887	0.568	0.372
PBC	0.872	0.634	0.503
ATT	0.843	0.519	0.504
PU	0.868	0.623	0.428
PEU	0.894	0.738	0.503

3.3. Structural equation modeling (SEM)

SEM was conducted to assess the hypotheses. The SEM results revealed an appreciable model fit with the data (Chi-square/df = 2.499, CFI = 0.912, GFI = 0.835, TLI = 0.902, RMSEA = 0.059). Table 3 showed the detailed results from testing the hypotheses. The results supported and confirmed all hypotheses except for 4 ones including H4, H8a, H8b (p-value > 0.05) and H8c (β=0.073 > 0).

Table 3. Hypothesis Decision

Hypothesis				Standardized factor loadings	P-value	Decision
H1	**INTE**	<---	**ATT**	.333	***	Accepted
H2a	**INTE**	<---	**PBC**	.131	.026	Accepted
H2b	**ATT**	<---	**PBC**	.282	***	Accepted
H3a	**INTE**	<---	**SN**	.181	.002	Accepted
H3b	**ATT**	<---	**SN**	.310	***	Accepted
H4	**ATT**	<---	**PEU**	.077	**.373**	Rejected
H5	**ATT**	<---	**PU**	.258	***	Accepted
H6	**PU**	<---	**PEU**	.557	***	Accepted
H7a	**INTE**	<---	**TRU**	.226	***	Accepted
H7b	**ATT**	<---	**TRU**	.292	***	Accepted

Hypothesis				Standardized factor loadings	P-value	Decision
H8a	**INTE**	<---	**PRI**	.064	**.226**	Rejected
H8b	**ATT**	<---	**PRI**	.024	**.636**	Rejected
H8c	**TRU**	<---	**PRI**	**.373**	***	Rejected

3.4. Multigroup Analysis

The results of multigroup analysis revealed p-value = 0.04 < 0.05, implying that the relationships between factors and the intention to order OFDS were found to be significantly different between males and females, and between people having less-than-5-million VND income and people having 5-million-or-more income.

Table 4. Results of Multigroup Analysis

			Males	Females	People having less-than-5-million VND income	People having 5-million VND-or-more income
PU	<---	PEU	.514	.551	.584	.364
TRU	<---	PRI	.424	.294	.414	.047
ATT	<---	PU	.363	.233	.266	.229
ATT	<---	TRU	.176	.294	.267	.616
ATT	<---	SN	.486	.232	.319	.233
ATT	<---	PBC	.200	.358	.270	.587
INTE	<---	PBC	.079	.171	.157	.031
INTE	<---	SN	.061	.241	.216	.046
INTE	<---	TRU	.357	.180	.187	.478
INTE	<---	ATT	.384	.277	.328	.199

4. Discussion and Conclusion

This paper amongst the first attempts to explore factors influencing youth's behavioral intention to order OFDS by integrating the TPB (Ajzen, 1991), the TAM (Davish et al., 1989) and extending them to consider both the role of trust and perceived risk. This

integrated model showed several interesting results both supporting and negating the previous studies.

Firstly, attitude was determined to be the strongest predictor of intention. The attitude towards using OFDS had a positive relationship with the intention to use the services. It was in line with the studies conducted by Ajzen (1991), Yeo et al. (2017), Lee et al. (2017) and Wang & Somogyi (2018).

Secondly, PBC had a positive influence on the intention. This confirmed the previous research such as Ajzen (1991), Hasen et al. (2004), Quevedo-Silva et al. (2016). Furthermore, PBC also affected ATT. But PBC was found to slightly influence BIs and ATT. Perhaps because members of Gen Z are true digital natives. From earliest youth, they have been exposed to the Internet, to social networks and to mobile systems.

Thirdly, the results of the data analysis showed that SN had a positive impact on INTE and ATT. This supported previous findings that the adoption of OFDS was more linked to the relevant other's opinions than to the individual's own attitude (Ajzen, 1991; Roh & Park, 2019; Alalwan, 2020).

Besides, our study confirmed the important role of trust in the formation of the intention to use. It could be interpreted that when consumers were able to trust the OFD platforms, they would have a better attitude towards using these services and were prone to use them. The significant impact of trust on the attitude and the intention to order OFDS supported the previous studies which demonstrated that trust was the significant predictor of the intention to use OFDS (Alagoz & Hekimoglu, 2012; Ashraf et al.,2019).

At the same time, the study's findings also indicated that PU directly affected ATT. It showed that consumers' attitude towards OFDS was influenced by how useful they find it. However, TAM's other factor, PEU only had an indirect effect on ATT through PU.

Finally, even if the previous research such as Hsin Chang & Wen Chen (2008), Nittala (2015) supported the negative influence of PRI, our study found that there was no significant relationship between PRI and ATT, also INTE. In addition, there was a positive relationship linking PRI and TRU. Perhaps because the sudden, unexpected, and virulent spread of the COVID-19 brought about a change in consumers' perception and behavioral intention, and many businesses made a strong shift towards online delivery services. People kept using OFDS as often after there were some social distancing measures due to the COVID-19 outbreak.

Recommendations

Our study provided some practical recommendations for these platform managers. Our data confirmed the importance of the perceived usefulness. One of the OFD's usefulness is cost and time saving. People enjoy having the ability to order food at any time and in any

place without wasting precious time buying food and/or cooking it at home, and they like to have the opportunity to choose food from different vendors to suit their fleeting desires. Thus, these results recommend that managers should define policies to help users to order and receive all their food together. Moreover, managers could also define promotional strategies to encourage their users' intention to order OFDS through voucher programmers. Besides, OFDS developers should emphasize the key attributes of the ordering task and design OFDS that capitalize on those attributes. For example, the order interfaces should be designed with concise information.

Furthermore, the results revealed that consumers' intentions to use OFDS are tied with their trust in the services. OFDS developers and restaurants should capitalize on this relationship by providing the relevant information such as pictures, ingredients, price, … so that the amount of information presented on the website does not constitute the bottleneck, thereby maintaining consumers' focus on the task. Besides, OFDS developers and restaurants must ensure that the nature of services provides meets and corresponds to the anticipation of the services customers expected. OFDS, which integrates service quality dimensions of assurance, efficiency, reliability, responsiveness, tangibles, and convenience, has the potential to influence the intention of the customers. In addition, OFDS managers need to focus on customer service, both before and after they buy and use the services since it is a key driver of business success. They should encourage service agents to ask questions when interacting with customers to know about customers and their needs.

Although the findings did not support all hypotheses about perceived risk, it would be necessary to make these perceived risks less relevant to develop OFDS effectively in the long-term future. Managers should define policies on high security on customer's information and account to reduce their negative opinions.

Meanwhile, managers should also develop new social media to advertise OFDS. For example, they can link between TikTok and OFDS because TikTok has become Gen Z's one of the most favorite social network channels. TikTok statistics (2020) showed there were 13 million Vietnamese people including the huge number of youths using TikTok. Thus, OFDS managers should pay more attention to trends on TikTok to create relevant content of OFDS to attract more potential customers.

These findings will probably have some intriguing implications for food businesses (e.g., restaurants) and policymakers or authorities as well. Food venues should focus their efforts on getting the most out of OFDS, creating dedicated customer service channels to enhance OFD-related operations. Policymakers and authorities should pay attention to OFDS and introduce and implement specific regulations to guarantee a high level of service quality.

Conclusions

OFDS is becoming more popular day by day with the increase in the usage of the Internet, so understanding customers' needs has become a challenge for marketers. Our study findings indicated that there were four factors such as attitude, trust, subjective norms, and perceived behavioral control which affected customers' intentions to use OFDS. The study also concluded the customer's attitude supported trust, subjective norms and perceived behavioral control and perceived usefulness. The results on perceived risk reveal that it had no significant effect on customers' attitude and intention. As a result, our study provided some practical recommendations for food businesses, policymakers, and authorities to develop OFDS.

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